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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/719,698

11/21/2003

Olivier Pinto

979-042

1348

7590 08/20/2007
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EXAMINER

GRAY, JILL M

ART UNIT

PAPER NUMBER

1774

MAIL DATE

DELIVERY MODE

08/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/719,698

Applicant(s)

PINTO, OLIVIER

Examiner

Jill M. Gray

Art Unit

1774

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The rejection of claims 1-8, 10-11, 13-14, 16, 18, and 20 under 35 U.S.C. 102(e) as being anticipated by Chase et al, US 2005/0089290 A1 is withdrawn in view of applicants' submission of a certified translation of the priority document.

The rejection of claims 12, 15, and 17 under 35 U.S.C. 103(a) as being unpatentable over Chase et al, US 2005/0089290 A1 is withdrawn in view of applicants' submission of a certified translation of the priority document.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. More specifically, the language of "includes at least on phosphorus group as an additional precursor" is new matter because the specification, as originally filed, does not disclose an additional precursor that contains phosphorus groups. The specification only discloses a single precursor material, whereby said single precursor material contains phosphorus groups. See for example, page 2, lines 7-19, page 3, line 36 through page 4 and line 2, and Examples. There is

Art Unit: 1774

no disclosure in the specification, as originally filed for the inclusion of an additional precursor material, whereby said additional precursor contains phosphorus groups.

Accordingly, the specification is not commensurate in scope with the claims.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, 7-8, 10-11, 16-17, and 20 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murphy et al, US 2003/0133679 A1 (Murphy).

Murphy discloses a flame-retardant cable comprising a transmission element, a flammable element, and a flame-retardant coating layer of resin surrounding said flammable element, wherein said flame-retardant layer includes a polymer obtained from a polymerizable liquid composition that contains at least a precursor for said

Art Unit: 1774

polymer, said precursor including functional groups of the type contemplated by applicants and wherein said polymerizable liquid includes at least one phosphorus group, as required by claims 1-3, further disclosing that said material is halogen-free, per claim 4. See entire document and for example [0021], [0023], and [0050]. In addition, Murphy discloses a flammable element of the type contemplated by applicants in claim 5, and that said transmission element can be a conductor of light, as required by claim 7. See for example, [0030]. Regarding claim 8, Murphy discloses that the flame-retardant coating layer is made by applying the polymerizable liquid composition on the flammable element. The limitations with respect to the specific coating techniques are process limitations within a product claim and add no patentable weight to the instant claimed product. See for example, [0029] and [0030]. Regarding claims 10-11, 16, and 20, Murphy discloses that the polymerizable liquid composition contains a reactive diluent comprising at least one acrylate functional group, wherein said reactive diluent is present in an amount within the instant claimed range. See for example, [0046]. As to claim 13, Murphy discloses that his composition can be polymerized by actinic radiation. See for example, [0031]. Also, it should be noted that the language of "when said actinic radiation is of the UV type, the composition includes a photoinitiator" is drawn to functional language that does not add patentable weight to the instant claimed flame-retardant cable.

Murphy does not specifically disclose that the phosphorus group is "chemically bonded" to the polymer after polymerization. However, it should be noted that the flame retardants considered suitable include additives having both phosphorus groups and

Art Unit: 1774

reactive functional groups. See for example [0050]-[0052]. Accordingly, the examiner has reason to believe that upon curing the phosphorus group is chemically bonded to the polymer after polymerization, in the absence of factual evidence to the contrary. Alternatively, the skilled artisan would reasonably presume some degree of reaction and bonding of the phosphorus group precursor during curing and polymerization of the curable composition.

Therefore, the teachings of Murphy anticipate or in the alternative render obvious the invention as claimed in present claims 1-5, 7-8, 10-11, 16-17, and 20.

1. Claims 1-8 are rejected under 35 U.S.C. 102(e) as being anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious over Sakurai et al, 6,770,820 B2 (Sakurai), for reasons of record.

Sakurai teaches a cable comprising a transmission element, a flammable element, and a flame-retardant coating of a cross-linkable resin surrounding the flammable element and comprising phosphoric acid methacrylate. See entire document and for example column 1, lines 24-33 and lines 58-61. Claim 8 is a product-by-process claim wherein process limitations add no patentable weight to the flame-retardant coating layer.

Sakurai does not specifically disclose that the phosphorus group is "chemically bonded" to the polymer after polymerization. However, it should be noted that the flame retardants considered suitable include additives having phosphorus groups and methacrylate, which is known in the art to have reactive functional groups. Accordingly, the examiner has reason to believe that upon curing the phosphorus group is chemically

bonded to the polymer after polymerization, in the absence of factual evidence to the contrary. Alternatively, the skilled artisan would reasonably presume some degree of reaction and bonding of the phosphorus group precursor during curing and polymerization of the curable composition.

Therefore, the teachings of Sakurai anticipate or in the alternative, render obvious the invention as claimed in present claims 1-8.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al, 6,755,995 B1 (Hasegawa) in view of Hall 6,025,422, for reasons of record, further in view of Ogawa et al, 4,417,018 (Ogawa).

Hasegawa teaches a flame retardant cable comprising a transmission element and flame retardant coating layer surrounding said element wherein this coating layer is made of a halogen free material that includes functional groups and contains phosphorus, per claims 1-4. See column 1, lines 9-10, column 2, lines 41-57, and column 4, line 30. Also, the transmission element can be a conductor and the composition contains an anti-abrasion compound such as silicone as required by claims 7, 10-12, and 16-17. See column 5, lines 1-7. Hasegawa is silent as to the presence of a flame retardant element (claim 5-6) and a photoinitiator (claims 13-14 and 18) as well as the polymer including phosphorus groups as a functional group. Hall teaches a flame retardant coating for optical fibers and cables, wherein said coating is applied as an outer jacket over flammable elements in known cable constructions. In addition, Hall teaches that cable jacketing compositions can contain a photoinitiator, which aids in maintaining a suitable density for the jacketing layer. It would have been obvious to

form a cable of known cable construction wherein the composition is used as a jacketing layer to protect the transmission elements and flammable insulating layers from fire and scorching. The incorporation of a photoinitiator, claims 13-14 and 18 would have been an obvious variant in the composition of Hasegawa in order to obtain suitable cable jacketing density as taught by Hall. As to claims 8-9, these claims are product-by-process claims wherein patentability is based on the product itself and not the method of making. As to claim 15, it is the examiner's position that the specific acrylate is no more than a preferential selection of one acrylate from among many being used for its art recognized purpose. Accordingly, in the absence of factual evidence to the contrary, this is not construed to be a matter of invention. Ogawa teaches a flame retardant composition comprising a cross-linkable resin obtained from a polymerizable liquid composition that includes phosphorus functional groups that are added to the composition to improve resistance to heat. See columns 9-10. It would have been obvious to modify the teachings of Hasegawa by including phosphorus functional groups to improve the heat resistance of the resultant composition.

Therefore, the combined teachings of Hasegawa, Hall and Ogawa would have rendered obvious the invention as claimed in present claims 1-20.

Response to Arguments

2. Applicant's arguments filed August 2, 2007 have been fully considered but they are not persuasive.

Applicants argue that the phosphorus taught by Sakurai is simply an additive that is blended to an existing polymer and that nothing in Sakurai suggest that phosphorus is chemically bonded to the polymer, further arguing that there is no teaching or suggestion in Sakurai that includes the phosphorus as a precursor for incorporation into the polymer. Rather Sakurai relates to an additive that is blended to an existing polymer.

In this regard, the examiner disagrees. In particular, it is noted that in each of the Tables in the Examples of Sakurai the adhesive is set forth as containing a polymer, organic peroxide, crosslinking aid, and silane coupling agent. There is no listing of a separate flame retardant additive containing phosphorus groups. On the contrary, Sakurai in his Examples makes no distinction between the base polymer and the flame retardant additive. Furthermore, Sakurai discloses "phosphoric acid methacrylate" as a flame retardant additive. The very nature of the additive itself, i.e. methacrylate, lends the skilled artisan to immediately envisage reactable groups and reaction with the base polymer. Also, Sakurai discloses that after blending, his resin is subject to thermal or optical curing or crosslinking. It is well known in this art that methacrylate is optically curable. Again one of ordinary skill in this art, at the time the invention was made, would immediately envisage some reaction of the phosphoric acid methacrylate and the base polymer and that the end resin product would result in some degree of phosphoric acid chemically bonded to the polymer. There is no factual evidence on this record to the contrary.

Applicants argue that there is no teaching or suggestion in Sakurai that discloses the phosphorus group is chemically bonded to the polymer and likewise that there is no teaching or suggestion that the phosphorus group is included as an additional precursor in the polymerizable liquid composition.

The examiner disagrees for the reasons previously stated and incorporated herein. Additionally, the inclusion of this component necessarily constitutes an additional precursor. The examiner further contends that Sakurai does not disclose that the resin end product constitutes separate phases of cured and/or crosslinked components or that the flame retardant additives are dispersed with in a continuous base resin or that the base polymer has a continuous network of flame retardant additives dispersed throughout and resulting in said flame retardant properties.

Applicants argue that the display of "superior properties directly related to the phosphorus groups being 'chemically bonded'" is not a proper standard of obviousness and that although applicant may assert a synergistic effect ("unexpected or superior properties") as a rebuttal to an established case of *prima facie* obviousness, in the present application, Applicant is asserting rather that the examiner has not met that initial burden of raising a *prima facie* obviousness rejection in the first place.

The examiner disagrees. The combined teachings of the prior art clearly suggest a flame retardant cable comprising a flame retardant coating layer that includes at least one phosphorus group. Accordingly, it is the position of the examiner that a *prima facie* case of obviousness has been made and secondary considerations are proper. Again, there is no factual evidence on this record that clearly distinguishes the instant claimed

Art Unit: 1774

flame retardant cable from that of the prior art, and there is no factual evidence on this record that the phosphorus groups of the prior art are not “chemically bonded” to the polymer, and there is no factual evidence on this record that the instant claimed flame retardant cable has unexpected or superior properties over the prior art cable, wherein said properties are directly related to the phosphorus groups being “chemically bonded” to the polymer. Applicants’ remarks asserting that a *prima facie* rejection has not been made or that the prior art does not result in “chemical bonding” are ineffective in rebutting said case and the prior art.

Applicants argue that as noted in prior amendments and Declaration one of ordinary skill in the art, at the time the invention was made could use the teachings of Hasegawa, Hall and Ogawa to arrive at the present invention as claimed.

In response thereto, the examiner agrees that one of ordinary skill in the art at the time the invention was made could use the teachings of Hasegawa, Hall and Ogawa to arrive at the present invention.

Applicants argue that for the reasons of record even if Hasegawa and Hall were combined the blended phosphorus additive of Ogawa the resulting wire/polymer would still not teach or render obvious all of the elements of independent claim 1, as the resulting wire/polymer would not teach or suggest the phosphorus group as used as a precursor and thereby being chemically bonded to the polymer.

The examiner disagrees, for reasons of record and incorporated herein.

Applicants argue that Ogawa does not show the phosphorus as a precursor that is chemically bonded to the polymer as a result of polymerization (by inclusion as a

precursor) and as noted in the previous amendments of record, in Ogawa any phosphorus is simply blended to an existing polymer.

In this regard, and as set forth previously, Ogawa teaches a flame retardant composition comprising a cross-linkable resin obtained from a polymerizable liquid composition that includes phosphorus functional groups that are added to the composition to improve resistance to heat. This teaching clearly provides a suggestion to the skilled artisan that some degree of bonding occurs between the phosphorus groups of Ogawa and the base polymer. As set forth previously, applicants have provided no factual evidence to the contrary. Hence, the examiner's position remains that the combined teachings of Hasegawa, Hall and Ogawa would have rendered obvious the invention as presently claimed.

No claims are allowed.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any


Art Unit: 1774

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill M. Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton I. Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jill M. Gray
Primary Examiner
Art Unit 1774

jmg